

Ifw

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Eric Olson

Jeffrey A. Spencer

Serial No.: 10/775,649

Filed: February 10, 2004

For: METHOD AND COMPOSITIONS FOR
STABILIZING MICROTUBULES AND
INTERMEDIATE FILAMENTS IN
STRIATED MUSCLE CELLS

Group Art Unit: Unknown

Examiner: Unknown

Atty. Dkt. No.: MYOG:028USD2

CERTIFICATE OF MAILING 37 C.F.R. 1.8	
I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: MS AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:	
August 5, 2004	Steven L. Highlander
Date	

INFORMATION DISCLOSURE STATEMENT

MS AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record.

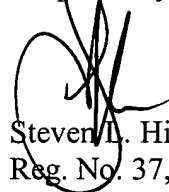
In accordance with 37 C.F.R. §§ 1.97(g), (h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present Information Disclosure Statement is being filed prior to the receipt of a first Official Action reflecting an examination on the merits, and hence is believed to be timely filed in accordance with 37 C.F.R. § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to these materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/MYOG:028USD2.

This application is a divisional application of Serial No. 09/908,988, filed July 18, 2001 and is relied upon for an earlier filing date under 35 U.S.C. § 120. In accordance with Rule 37 C.F.R. § 1.98(d) copies of the listed documents are not enclosed as they have been previously cited by or submitted to the Patent and Trademark Office in prior application Serial No. 09/908,988.

Applicants respectfully request that the listed documents be made of record in the present case.

Respectfully submitted,



Steven L. Highlander
Reg. No. 37,642
Attorney for Applicants

FULBRIGHT & JAWORSKI L.L.P.
600 Congress Avenue, Suite 2400
Austin, Texas 78701
(512) 474-5201

Date: August 5, 2004

Form PTO-1449 (modified)

Atty. Docket No.
MYOG:028USD2Serial No.
10/775,649

List of Patents and Publications for Applicant's

Applicant
Eric N. Olson
Jeffrey A. Spencer

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

Filing Date:
February 10, 2004Group:
UnknownU.S. Patent Documents
See Page 1Foreign Patent Documents
See Page 1Other Art
See Page 1

U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
	A1	5,403,711	4/4/95	Walder et al.	435	6	7/6/93
	A2	6,060,240	5/9/00	Kamb et al.	435	6	12/13/96
	A3	6,096,720	8/1/00	Love et al.	514	44	4/23/98
	A4	6,248,724	6/19/01	Moore et al.	514	44	9/25/98

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
	B1	WO 00/58473	10/5/00	PCT			
	B2	WO 01/42302	6/14/01	PCT			Abstract
	B3	WO 01/55322	8/2/01	PCT			
	B4	WO 01/62767	8/30/01	PCT			

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C1	Antin <i>et al.</i> , "Taxol induces postmitotic myoblasts to assemble interdigitating microtubule-myosin arrays that exclude actin filaments," <i>J. Cell Biol.</i> , 90(2):300-308, 1981.
	C2	Bartkiewicz <i>et al.</i> , "Leucine zipper-mediated homodimerization of the adaptor protein c-Cbl. A role in c-Cbl's tyrosine phosphorylation and its association with epidermal growth factor receptor," <i>J. Biol. Chem.</i> , 274(43):30887-30895, 1999.
	C3	Benjamin <i>et al.</i> , "Temporospatial expression of the small HSP/alpha B-crystallin in cardiac and skeletal muscle during mouse development," <i>Dev. Dyn.</i> , 208(1):75-84, 1997.
	C4	Borden, "RING fingers and B-boxes: zinc-binding protein-protein interaction domains," <i>Biochem. Cell Biol.</i> , 76:351-358, 1998.

25395780.1

EXAMINER:

DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

Form PTO-1449 (modified)		Atty. Docket No. MYOG:028USD2	Serial No. 10/775,649
List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant Eric N. Olson Jeffrey A. Spencer	
		Filing Date: February 10, 2004	Group: Unknown
U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C5	Buchner <i>et al.</i> , "MID2, a homologue of the Opitz syndrome gene MID1: similarities in subcellular localization and differences in expression during development," <i>Hum. Mol. Genet.</i> , 8:1397-1407, 1999.
	C6	Cainarca <i>et al.</i> , "Functional characterization of the Opitz syndrome gene product (midin): evidence for homodimerization and association with microtubules throughout the cell cycle," <i>Hum. Mol. Genet.</i> , 8:1387-1396, 1999.
	C7	Cao <i>et al.</i> , "Involvement of the rfp tripartite motif in protein-protein interactions and subcellular distribution," <i>J. Cell Sci.</i> , 110(Pt 14):1563-1571, 1997.
	C8	De The <i>et al.</i> , "The PML-RAR α fusion mRNA generated by the t(15;17) translocation in acute promyelocytic leukemia encodes a functionally altered RAR," <i>Cell</i> , 66(4):675-684, 1991.
	C9	Francis <i>et al.</i> , "Doublecortin is a developmentally regulated, microtubule-associated protein expressed in migrating and differentiating neurons," <i>Neuron.</i> , 23:247-256, 1999.
	C10	Freemont, "Ubiquitination: RING for destruction?" <i>Curr Biol.</i> , 10(2):R84-87, 2000.
	C11	Gleeson <i>et al.</i> , "Doublecortin is a microtubule-associated protein, and is expressed widely by migrating neurons," <i>Neuron.</i> , 2:257-271, 1999.
	C12	Gunderson <i>et al.</i> , "Generation of stable, posttranslationally modified microtubule array is an early event in myogenic differentiation," <i>J. Cell Biol.</i> , 109:2275-2288, 1989.
	C13	Hsieh <i>et al.</i> , "The RING finger/B-Box factor TAM-1 and a retinoblastoma-like protein LIN-35 modulate context-dependent gene silencing in <i>Caenorhabditis elegans</i> ," <i>Genes Dev.</i> , 13(22):2958-2970, 1999.
	C14	Kaech <i>et al.</i> , "Cytoskeletal plasticity in cells expressing neuronal microtubule-associated proteins," <i>Neuron</i> , 17(6):1189-1199, 1996.
	C15	Kaufman <i>et al.</i> , "The M-cadherin catenin complex interacts with microtubules in skeletal muscle cells: implications for the fusion of myoblasts," <i>J. Cell Sci.</i> , 112:55-67, 1999.
	C16	Kosik, "Tau protein and neurodegeneration," <i>Mol. Neurobiol.</i> , 4(3-4):171-179, 1990.
	C17	Li <i>et al.</i> , "The association of <i>Xenopus</i> nuclear factor 7 with subcellular structures is dependent upon phosphorylation and specific domains," <i>Exp. Cell Res.</i> , 13(2):473-481, 1994.

25395780.1

EXAMINER:

DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

Form PTO-1449 (modified)		Atty. Docket No. MYOG:028USD2	Serial No. 10/775,649
List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant Eric N. Olson Jeffrey A. Spencer	
		Filing Date: February 10, 2004	Group: Unknown
U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C18	Lo Nigro <i>et al.</i> , "Point mutations and an intragenic deletion in LIS1, the lissencephaly causative gene in isolated lissencephaly sequence and Miller-Dieker syndrome," <i>Hum. Mol. Genet.</i> , 6(2):157-164, 1997.
	C19	Mangan and Olmsted, "A muscle-specific variant of the microtubule-associated protein 4 (MAP4) is required for myogenesis," <i>Dev.</i> , 122:771-781, 1996.
	C20	Marszalek <i>et al.</i> , "Situs inversus and embryonic ciliary morphogenesis defects in mouse mutants lacking the KIF3A subunit of kinesin-II," <i>Proc. Nat'l Acad. Sci.</i> , 96(9):5043-5048, 1999.
	C21	Nguyen <i>et al.</i> , "Overexpression of full- or partial-length MAP4 stabilizes microtubules and alters cell growth," <i>J. Cell Sci.</i> , 110 (Pt 2):281-294, 1997.
	C22	Nguyen <i>et al.</i> , "Stabilization and functional modulation of microtubules by microtubule-associated protein 4," <i>Biol. Bull.</i> , 194(3):354-357, 1998.
	C23	Quaderi <i>et al.</i> , "Opitz G/BBB syndrome, a defect in midline development, is due to mutation in a new RING finger gene on Xp22," <i>Nat. Gen.</i> , 17:285-291, 1997.
	C24	Rawls <i>et al.</i> , "Overlapping functions of the myogenic bHLH genes MRF4 and MyoD revealed in double mutant mice," <i>Development</i> , 125(13):2349-2358, 1998.
	C25	Sapir <i>et al.</i> , "LIS1 is a microtubule-associated phosphoprotein," <i>Eur. J. Biochem.</i> , 265(1):181-188, 1999.
	C26	Sapir <i>et al.</i> , "Reduction of microtubule catastrophe events by LIS1, platelet-activating factor acetylhydrolase subunit," <i>EMBO J.</i> , 16(23):6977-6984, 1997.
	C27	Sato <i>et al.</i> , "Microtubule stabilization in pressure overload cardiac hypertrophy," <i>J. Cell Biol.</i> , 139:963-973, 1997.
	C28	Saurin <i>et al.</i> , "Does this have a familiar RING?" <i>TIBS</i> , 21(6):208-214, 1996.
	C29	Schulze <i>et al.</i> , "Posttranslational modification and microtubule stability," <i>J. Cell Biol.</i> , 105: 2167-2177, 1987.
	C30	Schweiger <i>et al.</i> , "The Opitz syndrome gene product, MID1, associates with microtubules," <i>Proc. Nat'l Acad. Sci. USA</i> , 96:2794-2799, 1999.
	C31	Sotiropoulos <i>et al.</i> , "Signal-regulated activation of serum response factor is mediated by changes in actin dynamics," <i>Cell.</i> , 98: 159-169, 1999.

25395780.1

EXAMINER:

DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

Form PTO-1449 (modified)		Atty. Docket No. MYOG:028USD2	Serial No. 10/775,649
List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant Eric N. Olson Jeffrey A. Spencer	
		Filing Date: February 10, 2004	Group: Unknown
U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C32	Spencer and Misra, "Expression of the serum response factor gene is regulated by serum response factor binding sites," <i>J. Biol. Chem.</i> , 271(28):16535-16543, 1996.
	C33	Spencer <i>et al.</i> , "Cooperative transcriptional activation by serum response factor and the high mobility group protein SSRP1," <i>J. Biol. Chem.</i> , 274(22):15686-15693, 1999.
	C34	Stone and Chambers, "Microtubule inhibitors elicit differential effects on MAP kinase (JNK, ERK, and p38) signaling pathways in human KB-3 carcinoma cells," <i>Exp. Cell. Res.</i> , 254: 110-119, 2000.
	C35	Supp <i>et al.</i> , "Targeted deletion of the ATP binding domain of left-right dynein confirms its role in specifying development of left-right asymmetries," <i>Dev.</i> , 126:5495-5504, 1999.
	C36	Takeda <i>et al.</i> , "Left-right asymmetry and kinesin superfamily protein KIF3A: new insights in determination of laterality and mesoderm induction by kif3A ^{-/-} mice analysis," <i>J. Cell Biol.</i> , 145:825-836, 1999.
	C37	Takemura <i>et al.</i> , "Increased microtubule stability and alpha tubulin acetylation in cells transfected with microtubule-associated proteins MAP1B, MAP2 or tau," <i>J. Cell Sci.</i> , 103 (Pt 4):953-964, 1992.
	C38	Tolnay and Probst, "Review: tau protein pathology in Alzheimer's disease and related disorders," <i>Neuropathol. Appl. Neurobiol.</i> , 25(3):171-187, 1999.
	C39	Toyama <i>et al.</i> , "Effects of taxol and Colcemid on myofibrillogenesis," <i>Proc. Natl. Acad. Sci.</i> , 79(21):6556-6560, 1982.
	C40	Wang <i>et al.</i> , "Removal of MAP4 from microtubules in vivo produces no observable phenotype at the cellular level," <i>J. Cell Biol.</i> , 132(3):345-357, 1996.
	C41	Webster, "Neonatal rat cardiomyocytes possess a large population of stable microtubules that is enriched in post-translationally modified subunits," <i>J. Mol. Cell Cardio.</i> , 29:2813-2824, 1997.
	C42	Zetser <i>et al.</i> , "p38 mitogen-activated protein kinase pathway promotes skeletal muscle differentiation. Participation of the MEF2C transcription factor," <i>J. Biol. Chem.</i> , 274: 5193-5200, 1999.
	C43	Centner <i>et al.</i> , "Identification of muscle specific ring finger proteins as potential regulators of the titin kinase domain," <i>J. Mol. Biol.</i> , 306:717-726, 2001.
	C44	Database EMBL accession No. AA840584.

25395780.1

EXAMINER:

DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

Form PTO-1449 (modified)		Atty. Docket No. MYOG:028USD2	Serial No. 10/775,649
List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant Eric N. Olson Jeffrey A. Spencer	
		Filing Date: February 10, 2004	Group: Unknown
U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C45	Database EMBL accession No. AAS25842.
	C46	Database EMBL accession No. AAS25855.
	C47	Database EMBL accession No. AAU15855.
	C48	Database EMBL accession No. AAU15868.
	C49	Database EMBL accession No. AB030912.
	C50	Database EMBL accession No. AF294790.
	C51	Database EMBL accession No. AI644642.
	C52	Database EMBL accession No. AJ291712.
	C53	Database EMBL accession No. AJ291713.
	C54	Database EMBL accession No. AV006036.
	C55	Database EMBL accession No. AV006120.
	C56	Lee <i>et al.</i> , "Myosin light chain-2 luciferase transgenic mice reveal distinct regulatory programs for cardiac skeletal muscle-specific expression of a single contractile protein gene," <i>J. Biol. Chem.</i> , 267(22):15875-15885, 1992.
	C57	Spencer <i>et al.</i> , "Regulation of microtubule dynamics and myogenic differentiation by MURF, a striated muscle RING-finger protein," <i>J. Cell Biol.</i> , 150(4):771-784, 2000.
	C58	Lee <i>et al.</i> , EMBL database, Accession No. AA800245, published April 30, 1998.
	C59	Konno <i>et al.</i> , EMBL database, Accession No. BB140247, published June 28, 2000.

25395780.1

EXAMINER:

DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.



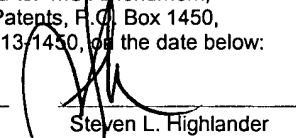
FULBRIGHT & JAWORSKI L.L.P.

A REGISTERED LIMITED LIABILITY PARTNERSHIP
600 CONGRESS AVENUE, SUITE 2400
AUSTIN, TEXAS 78701-3271
WWW.FULBRIGHT.COM

SHIGHLANDER@FULBRIGHT.COM
DIRECT DIAL: (512) 536-3184

TELEPHONE: (512) 474-5201
FACSIMILE: (512) 536-4598

August 5, 2004

CERTIFICATE OF MAILING 37 C.F.R. 1.8	
I certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:	
August 5, 2004	
Date	Steven L. Highlander

MS AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

RE: *U.S. Patent Application No.10/775,649 entitled "METHOD AND COMPOSITIONS FOR STABILIZING MICROTUBULES AND INTERMEDIATE FILAMENTS IN STRIATED MUSCLE CELLS" – by Eric Olson and Jeffrey A. Spencer*
Our Ref. MYOG:028USD2

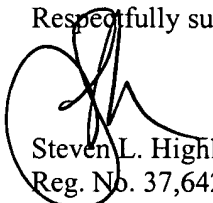
Sir :

Enclosed for filing in the above-referenced patent application is an Information Disclosure Statement and Form PTO-1449.

No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to the enclosed materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/MYOG:028USD2.

Please date stamp and return the enclosed postcard evidencing receipt of these materials.

Respectfully submitted,


Steven L. Highlander
Reg. No. 37,642

SLH/kmv
Encl.: as noted

25395787.1